

## THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A rotary blood pump including: a motor adapted to magnetically rotate an impeller within a housing; characterised in that the impeller or the housing are formed of a composite material and said composite material includes a first material that is a relatively, insulative, biocompatible and impermeable polymer.
2. The rotary blood pump as claimed in claim 1, wherein the composite material includes a second material that reinforces the polymer.
3. The rotary blood pump as claimed in claim 1, wherein the pump includes an insulative member formed from said first material.
4. The rotary blood pump as claimed in claim 3, said insulative member is disposed between portions of the motor to reduce eddy currents losses.
5. A rotary blood pump as claimed in claim 1, wherein said first material has been surface modified by treatment of plasma immersion ion implantation.
6. A rotary blood pump as claimed in claim 1, said impeller includes magnets that are encapsulated by an impermeable fluid barrier.
7. A rotary blood pump as claimed in claim 1, wherein said first material is: PEEK, FRP, PC, PS, PEP, PCU, SiU, PVC, PVDF, PE, PMMA, ABS, PET, PA, AR, PDSM, SP, AEK, T, MPP or a combination thereof.
8. The rotary blood pump as claimed in claim 1, wherein said impeller is hydrodynamically suspended.
9. A rotary blood pump including: a motor adapted to magnetically rotate a hydrodynamically suspended impeller within a housing; characterised in that the impeller and/or the housing are formed of a composite material, said pump including at least one insulative member disposed between portions of said motor to reduce eddy current losses and said insulative member is substantially formed from a biocompatible and impermeable polymer.
10. A rotary blood pump as claimed in claim 9 wherein said composite material includes a metal metallic alloy.
11. A rotary blood pump as claimed in claim 10 wherein said metallic alloy is a titanium alloy.